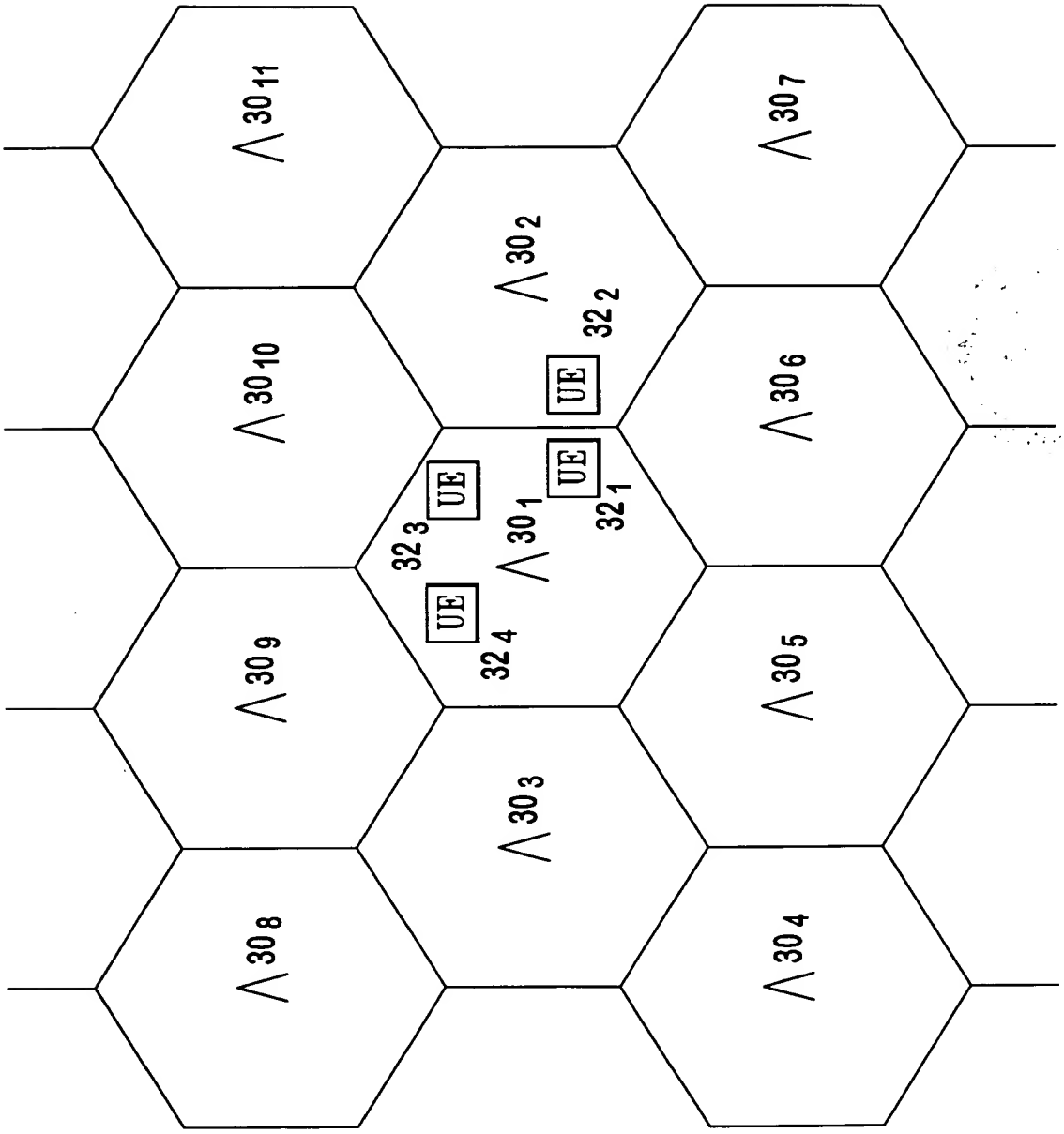
30 11
30 2
30 7
30 10
32 2
UE
30 6
UE
32 3
UE
30 1
32 1
30 9
32 4
30 5
30 3
30 8
30 4

FIG. 1

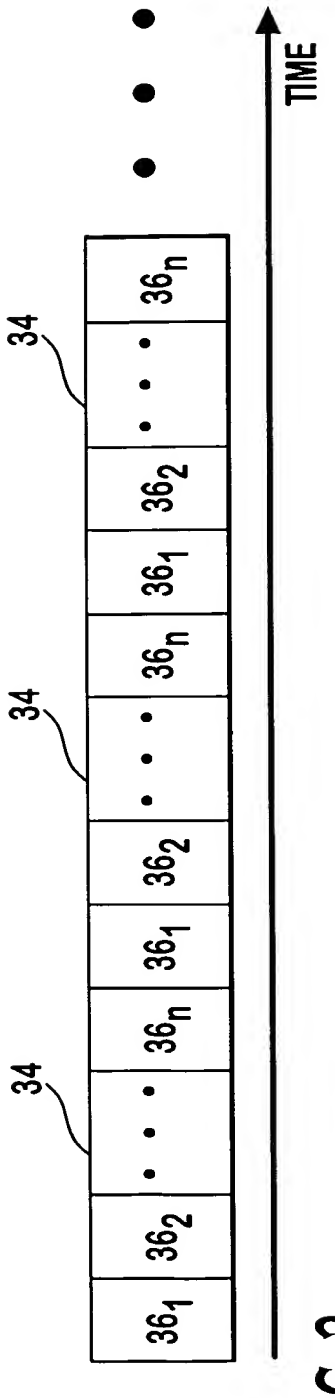

FIG. 2

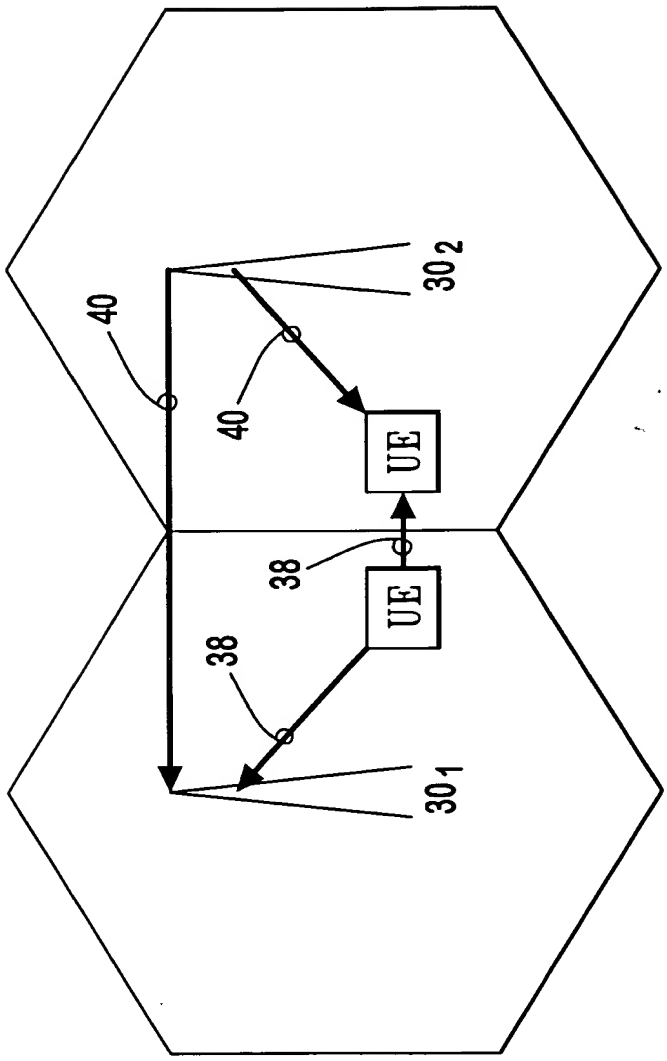

FIG. 3

76

AVAILABILITY LIST				
CELL (UPLINK / DOWNLINK)	TIME SLOT AVAILABILITY			
	S1	S2	•••	SN
1 (UPLINK)	X	X	•••	
1 (DOWNLINK)		X	•••	X
2 (UPLINK)	X	X	•••	
2 (DOWNLINK)			•••	X
	⋮			
N (UPLINK)	X	X	•••	
N (DOWNLINK)		X	•••	X

FIG. 4

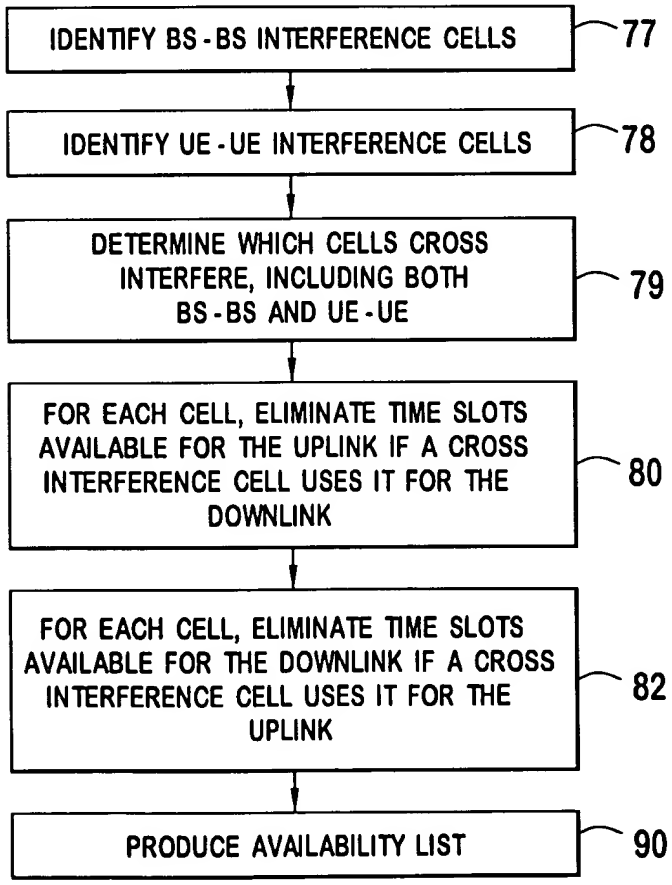

FIG. 5

84

CROSS INTERFERENCE CELL LIST											
CELL	POTENTIAL CROSS INTERFERING CELLS										
	1	2	3	4	5	6	7	8	9	10	11
1	X	I	I		I	I*			I	I	
2	I	X				I	I			I	I
3	I		X	I	I*			I	I		
4			I	X	I						
5	I		I*	I	X	I					
6	I*	I			I	X	I				
7		I				I	X				
8			I					X	I		
9	I		I					I	X	I	
10	I	I							I	X	I
11		I								I	X

FIG. 6

86

TIME SLOT ALLOCATION PER CELL															
CELL	TIME SLOT ALLOCATION														
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1			D	U											
2	D	D							U						
3				U	D										
4										D	D				
5			D											U	
6						D									U
7										D					
8										D	D				
9						D	U								
10			D	U											
11										D	D	D	D		U

FIG. 7

88

AVAILABILITY LIST FOR CELL 1															
CELL (UPLINK / DOWNLINK)	TIME SLOT AVAILABILITY														
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1 (UPLINK)	X	X	X		X	X									
1 (DOWNLINK)				X			X		X					X	X

FIG. 8

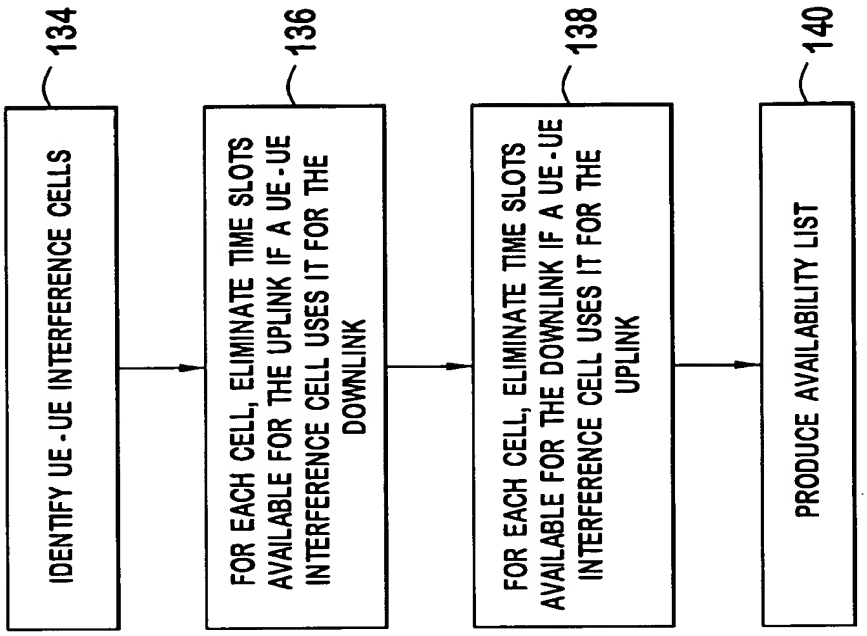
134
IDENTIFY UE-UE INTERFERENCE CELLS
136
FOR EACH CELL, ELIMINATE TIME SLOTS AVAILABLE FOR THE UPLINK IF A UE-UE INTERFERENCE CELL USES IT FOR THE DOWNLINK
138
FOR EACH CELL, ELIMINATE TIME SLOTS AVAILABLE FOR THE DOWNLINK IF A UE-UE INTERFERENCE CELL USES IT FOR THE UPLINK
140
PRODUCE AVAILABILITY LIST

FIG. 11

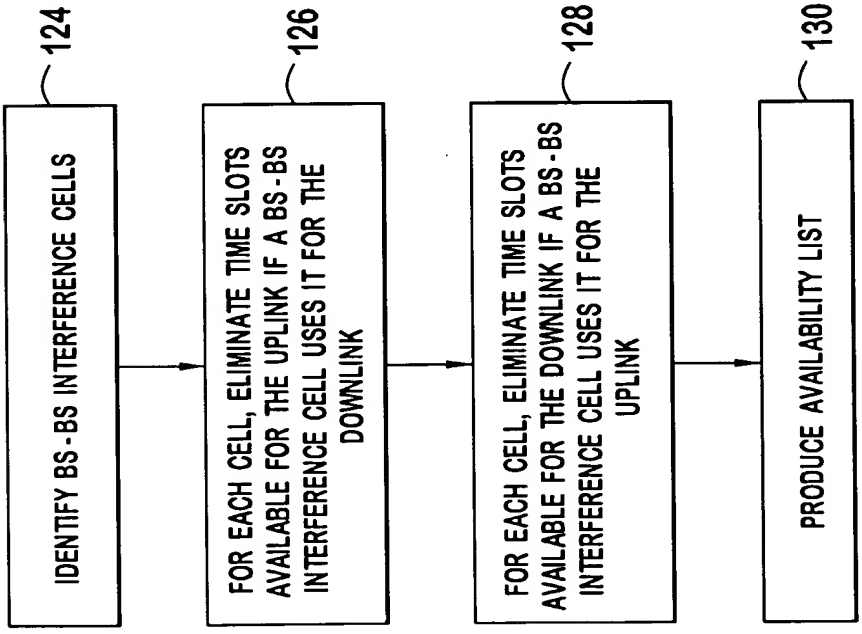
124
IDENTIFY BS-BS INTERFERENCE CELLS
126
FOR EACH CELL, ELIMINATE TIME SLOTS AVAILABLE FOR THE UPLINK IF A BS-BS INTERFERENCE CELL USES IT FOR THE DOWNLINK
128
FOR EACH CELL, ELIMINATE TIME SLOTS AVAILABLE FOR THE DOWNLINK IF A BS-BS INTERFERENCE CELL USES IT FOR THE UPLINK
130
PRODUCE AVAILABILITY LIST

FIG. 9

132

BS-BS CROSS INTERFERENCE CELL LIST											
	POTENTIAL CROSS INTERFERING CELLS										
CELL	1	2	3	4	5	6	7	8	9	10	11
1	X	I	I		I				I	I	
2	I	X				I	I			I	I
3	I		X	I				I	I		
4			I	X	I						
5	I			I	X	I					
6		I			I	X	I				
7		I				I	X				
8			I					X	I		
9	I		I					I	X	I	
10	I	I							I	X	I
11		I								I	X

FIG. 10

142

UE-UE CROSS INTERFERENCE CELL LIST											
	POTENTIAL CROSS INTERFERING CELLS										
CELL	1	2	3	4	5	6	7	8	9	10	11
1	X	I*	I*		I*	I*			I*	I*	
2	I*	X				I*	I*			I*	I*
3	I*		X	I*	I*			I*	I*		
4			I*	X	I*						
5	I*		I*	I*	X	I*					
6	I*	I*			I*	X	I*				
7		I*				I*	X				
8			I*					X	I*		
9	I*		I*					I*	X	I*	
10	I*	I*							I*	X	I*
11		I*								I*	X

FIG. 12

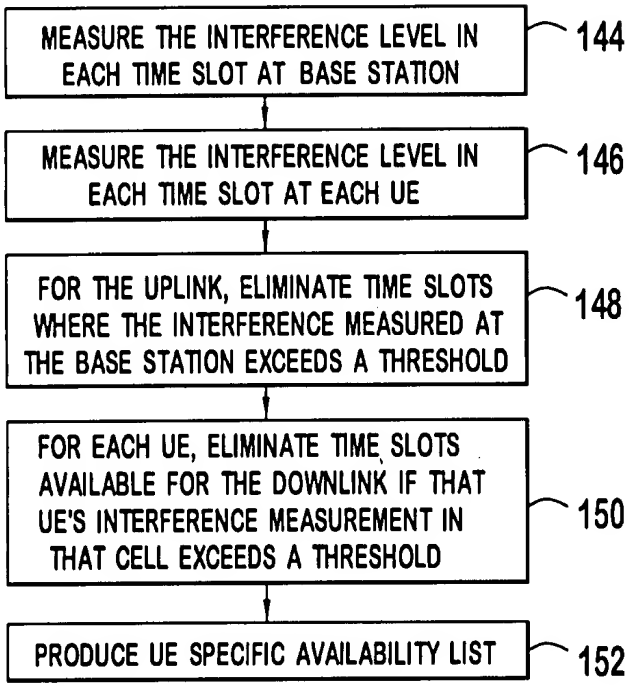

FIG. 13

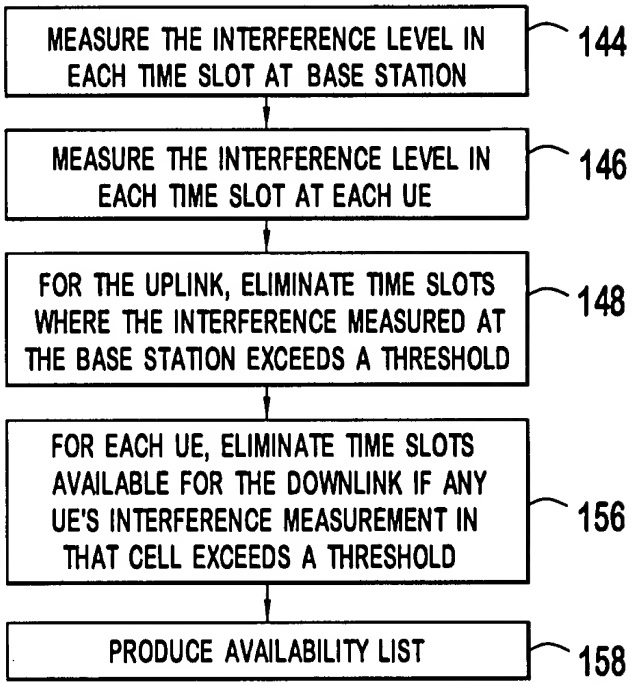

FIG. 14

154

AVAILABILITY LIST FOR CELL N

UE IN CELL N (UPLINK / DOWNLINK)	TIME SLOT AVAILABILITY														
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
CELL (UPLINK)	X	X					X								
UE 1 (DOWNLINK)			X						X					X	X
UE 2 (DOWNLINK)									X						X
						...									
UE N (DOWNLINK)						X	X	X	X						X

FIG. 15

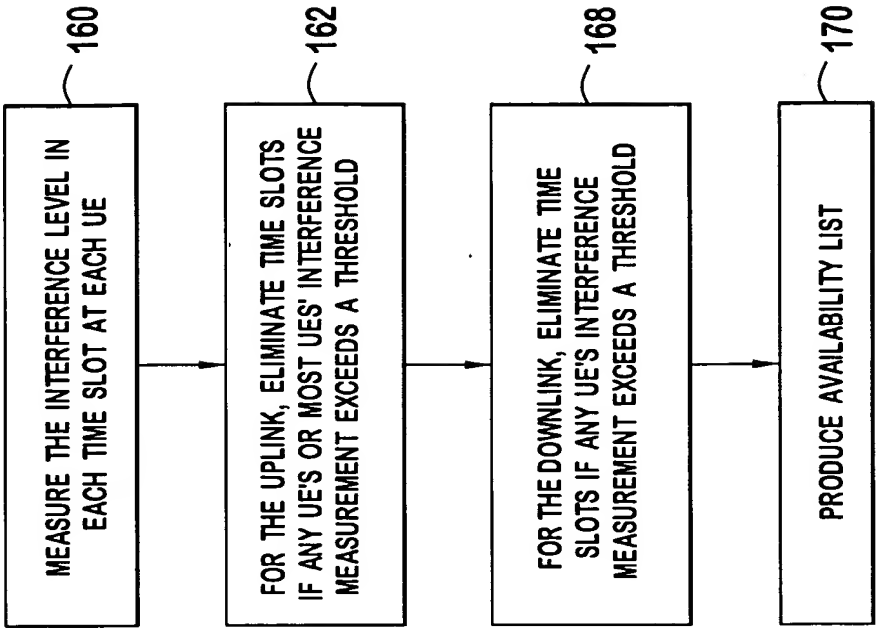
160
MEASURE THE INTERFERENCE LEVEL IN EACH TIME SLOT AT EACH UE
162
FOR THE UPLINK, ELIMINATE TIME SLOTS IF ANY UE'S OR MOST UES' INTERFERENCE MEASUREMENT EXCEEDS A THRESHOLD
168
FOR THE DOWNLINK, ELIMINATE TIME SLOTS IF ANY UE'S INTERFERENCE MEASUREMENT EXCEEDS A THRESHOLD
170
PRODUCE AVAILABILITY LIST

FIG. 17

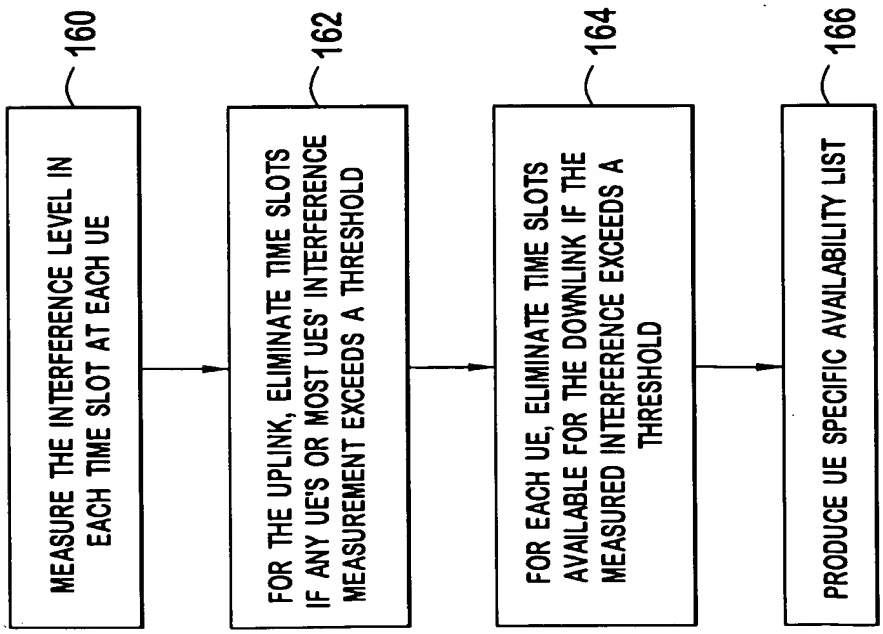
160
MEASURE THE INTERFERENCE LEVEL IN EACH TIME SLOT AT EACH UE
162
FOR THE UPLINK, ELIMINATE TIME SLOTS IF ANY UE'S OR MOST UES' INTERFERENCE MEASUREMENT EXCEEDS A THRESHOLD
164
FOR EACH UE, ELIMINATE TIME SLOTS AVAILABLE FOR THE DOWNLINK IF THE MEASURED INTERFERENCE EXCEEDS A THRESHOLD
166
PRODUCE UE SPECIFIC AVAILABILITY LIST

FIG. 16

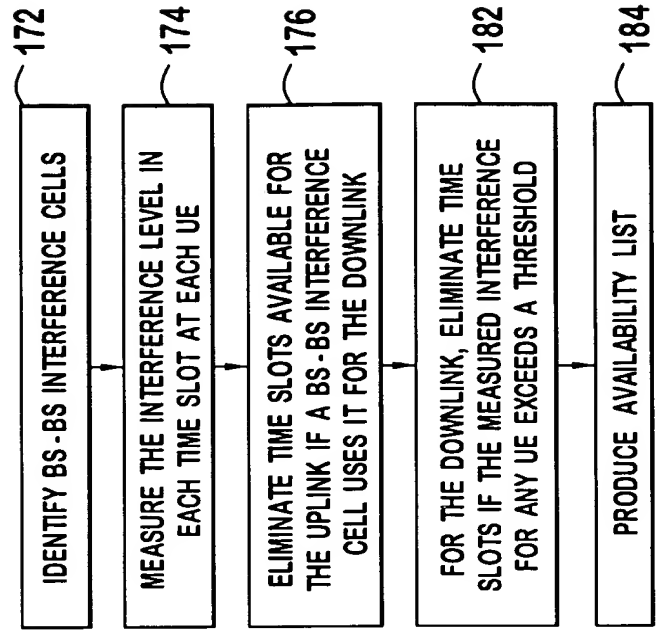
172
IDENTIFY BS-BS INTERFERENCE CELLS
174
MEASURE THE INTERFERENCE LEVEL IN EACH TIME SLOT AT EACH UE
176
ELIMINATE TIME SLOTS AVAILABLE FOR THE UPLINK IF A BS-BS INTERFERENCE CELL USES IT FOR THE DOWNLINK
182
FOR THE DOWNLINK, ELIMINATE TIME SLOTS IF THE MEASURED INTERFERENCE FOR ANY UE EXCEEDS A THRESHOLD
184
PRODUCE AVAILABILITY LIST

FIG. 19

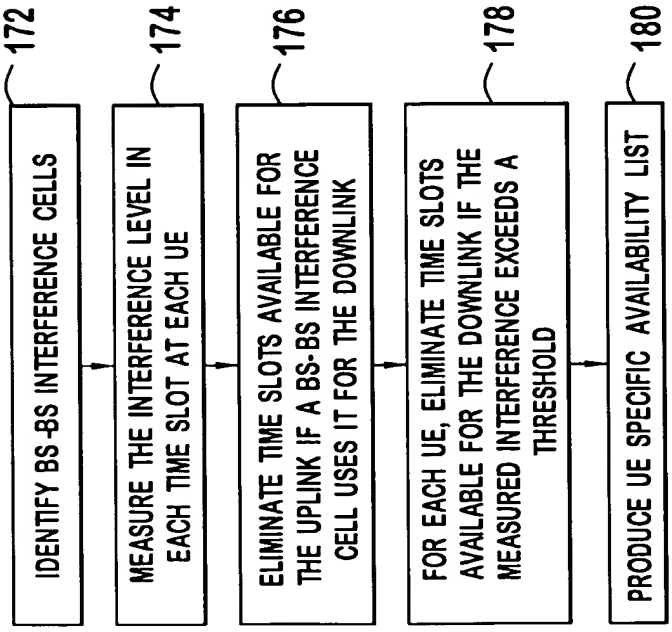
172
IDENTIFY BS-BS INTERFERENCE CELLS
174
MEASURE THE INTERFERENCE LEVEL IN EACH TIME SLOT AT EACH UE
176
ELIMINATE TIME SLOTS AVAILABLE FOR THE UPLINK IF A BS-BS INTERFERENCE CELL USES IT FOR THE DOWNLINK
178
FOR EACH UE, ELIMINATE TIME SLOTS AVAILABLE FOR THE DOWNLINK IF THE MEASURED INTERFERENCE EXCEEDS A THRESHOLD
180
PRODUCE UE SPECIFIC AVAILABILITY LIST

FIG. 18

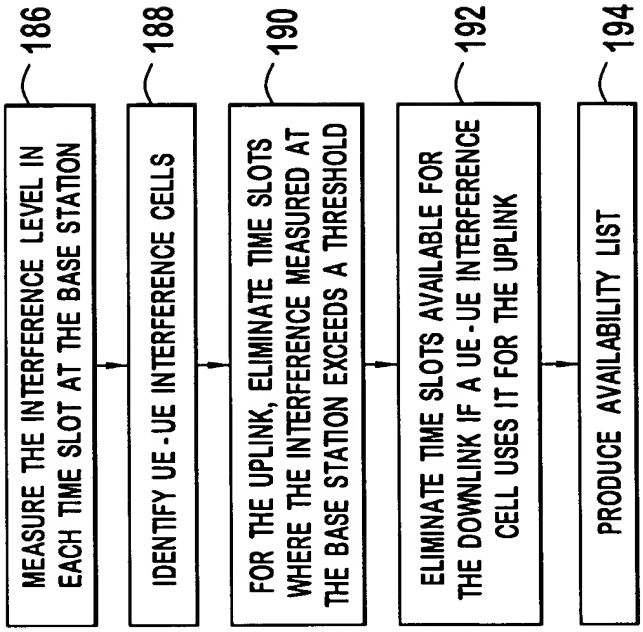
186
MEASURE THE INTERFERENCE LEVEL IN EACH TIME SLOT AT THE BASE STATION
188
IDENTIFY UE-UE INTERFERENCE CELLS
190
FOR THE UPLINK, ELIMINATE TIME SLOTS WHERE THE INTERFERENCE MEASURED AT THE BASE STATION EXCEEDS A THRESHOLD
192
ELIMINATE TIME SLOTS AVAILABLE FOR THE DOWNLINK IF A UE-UE INTERFERENCE CELL USES IT FOR THE UPLINK
194
PRODUCE AVAILABILITY LIST

FIG. 20

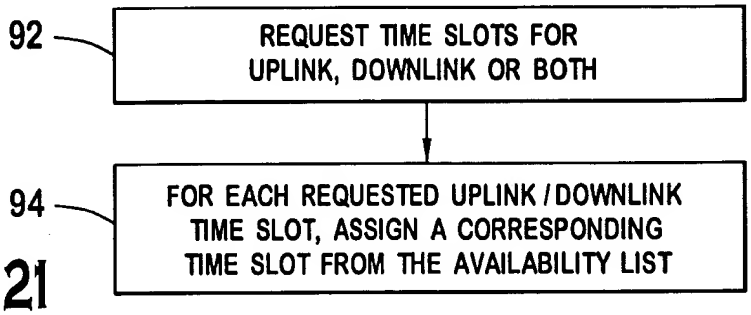
92
REQUEST TIME SLOTS FOR UPLINK, DOWNLINK OR BOTH
94
FOR EACH REQUESTED UPLINK/DOWNLINK TIME SLOT, ASSIGN A CORRESPONDING TIME SLOT FROM THE AVAILABILITY LIST

FIG. 21

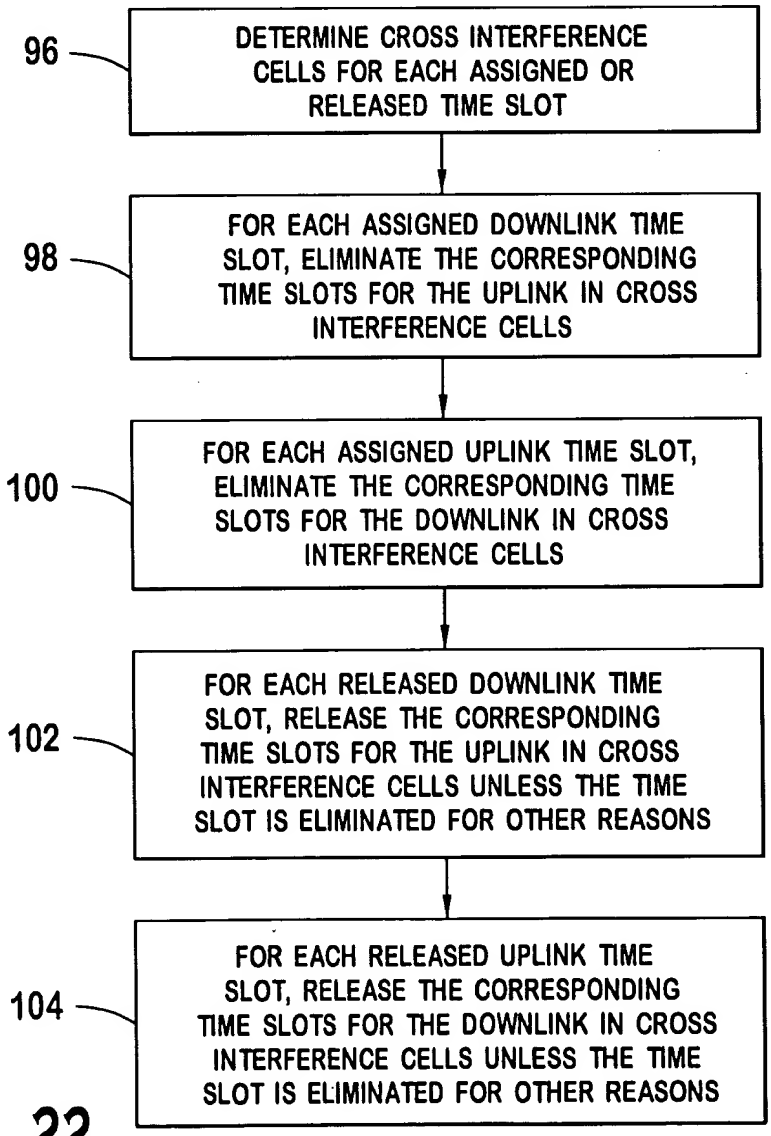
96
DETERMINE CROSS INTERFERENCE CELLS FOR EACH ASSIGNED OR RELEASED TIME SLOT
98
FOR EACH ASSIGNED DOWNLINK TIME SLOT, ELIMINATE THE CORRESPONDING TIME SLOTS FOR THE UPLINK IN CROSS INTERFERENCE CELLS
100
FOR EACH ASSIGNED UPLINK TIME SLOT, ELIMINATE THE CORRESPONDING TIME SLOTS FOR THE DOWNLINK IN CROSS INTERFERENCE CELLS
102
FOR EACH RELEASED DOWNLINK TIME SLOT, RELEASE THE CORRESPONDING TIME SLOTS FOR THE UPLINK IN CROSS INTERFERENCE CELLS UNLESS THE TIME SLOT IS ELIMINATED FOR OTHER REASONS
104
FOR EACH RELEASED UPLINK TIME SLOT, RELEASE THE CORRESPONDING TIME SLOTS FOR THE DOWNLINK IN CROSS INTERFERENCE CELLS UNLESS THE TIME SLOT IS ELIMINATED FOR OTHER REASONS

FIG. 22

106

TIME SLOT ALLOCATION PER CELL															
CELL	TIME SLOT ALLOCATION														
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
1			D	U											
2	D	D							U						
3				U	D										
4										D	D				
5			D											U	
6						D**	D*	U*							U
7										D					
8										D	D				
9						D	U								
10			D	U											
11										D	D	D	D		U

FIG. 23

108

AVAILABILITY LIST FOR CELL 7															
CELL (UPLINK / DOWNLINK)	TIME SLOT AVAILABILITY														
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
7 (UPLINK)	X	X				R	X*								
7 (DOWNLINK)								X*	X						X

FIG. 24

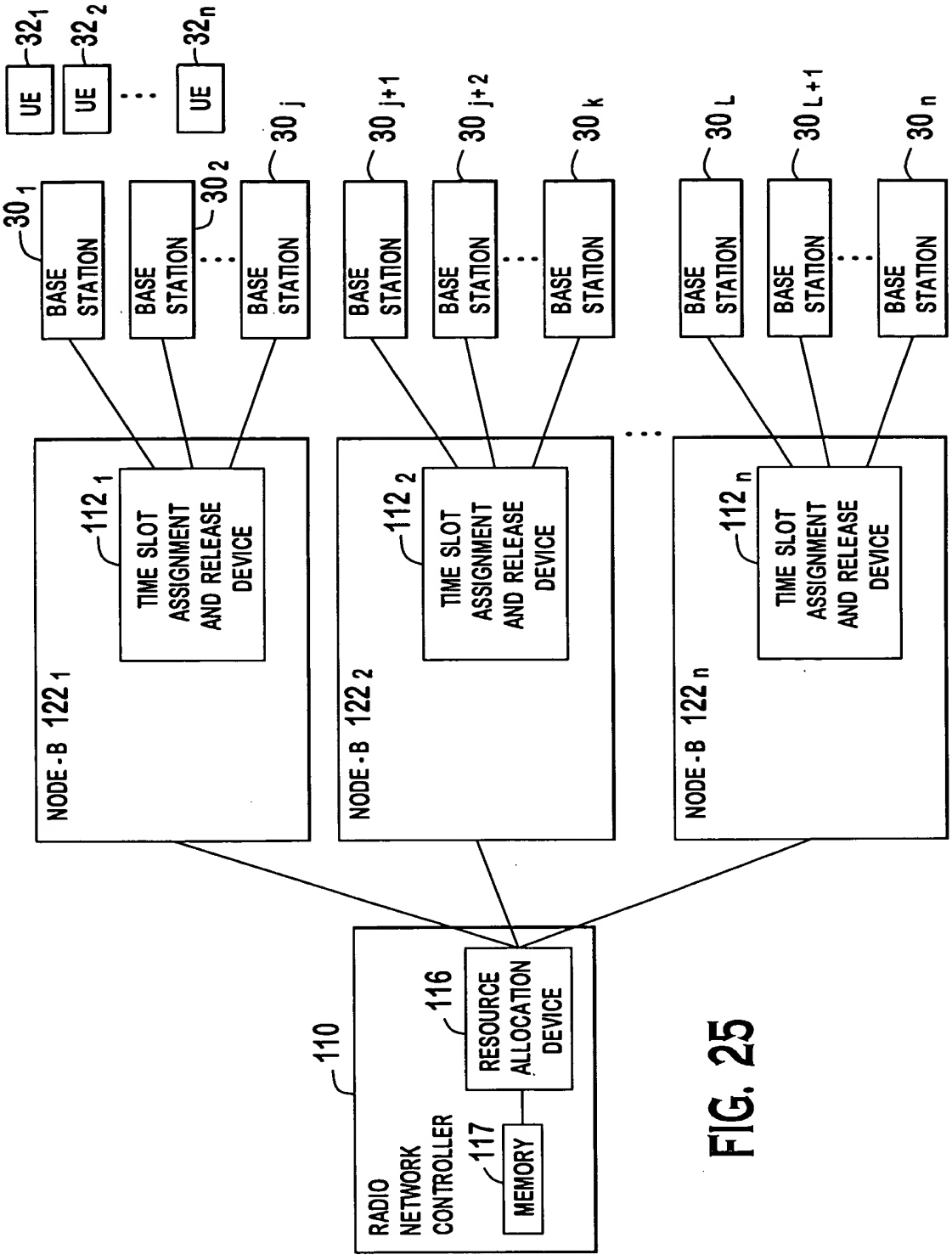
RADIO NETWORK CONTROLLER
110
RESOURCE ALLOCATION DEVICE
116
MEMORY
117
NODE-B 122 1
NODE-B 122 2
NODE-B 122 n
TIME SLOT ASSIGNMENT AND RELEASE DEVICE
112 1
112 2
112 n
BASE STATION
30 1
30 2
30 j
30 j+1
30 j+2
30 k
30 L
30 L+1
30 n
UE
32 1
32 2
32 n

FIG. 25

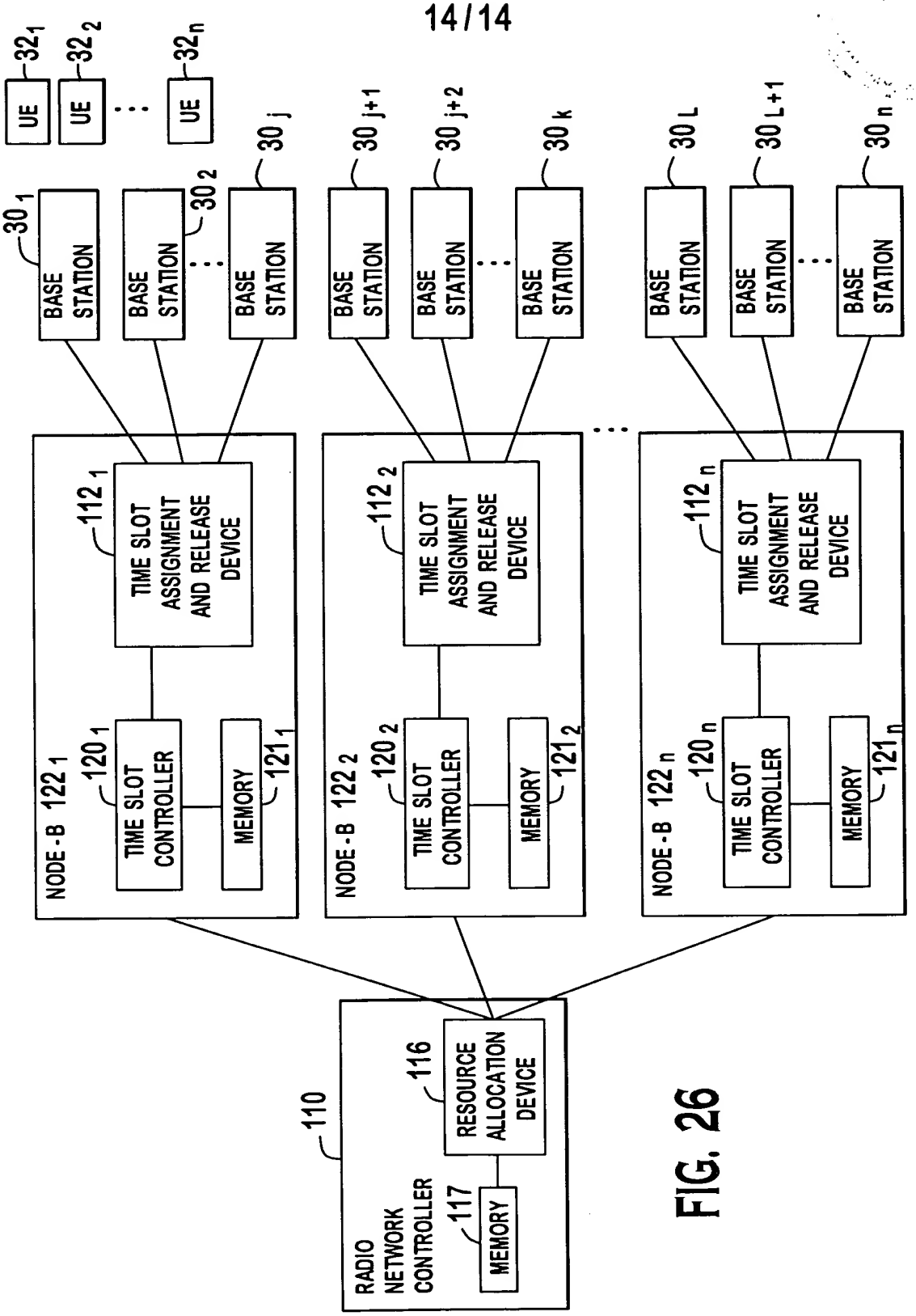
RADIO NETWORK CONTROLLER
110
RESOURCE ALLOCATION DEVICE
116
MEMORY
117
NODE-B 122 1
NODE-B 122 2
NODE-B 122 n
TIME SLOT CONTROLLER
120 1
120 2
120 n
MEMORY
121 1
121 2
121 n
TIME SLOT ASSIGNMENT AND RELEASE DEVICE
112 1
112 2
112 n
BASE STATION
30 1
30 2
30 j
30 j+1
30 j+2
30 k
30 L
30 L+1
30 n
UE
32 1
32 2
32 n

FIG. 26